

Claims

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1 1. A machine-based method comprising
1 enabling storage of bindings that describe a document
2 by associating content elements with layout elements, the
3 layout elements defining layout features or placement
4 information to be applied to the associated content elements
5 in the document, the bindings being stored separately from
6 both the content and layout elements.

7 2. The method of claim 1 further comprising
1 enabling storage of bindings that describe another,
2 different document by associating at least one of the content
3 elements with at least one of the layout elements, at least
4 one layout element defining layout features or placement
5 information to be applied to at least one corresponding
6 content element in the different document, the bindings for
7 the different document being stored separately from the
8 bindings for the document and separately from the content and
9 layout elements.

10 3. A machine-based method comprising
1 enabling storage of bindings that describe a document
2 by associating content elements with layout elements, the
3 layout elements defining layout features or placement
4 information to be applied to the associated content elements
5 in the document,

6 enabling storage of bindings that describe another,
7 different document by associating at least one of the content
8 elements with at least one of the layout elements, the at
9 least one layout element defining layout features or
10 placement information to be applied to the corresponding at
11 least one content element in the different document.

12 4. The method of claim 1 or 3 in which the bindings
13 provide a primary control for the generation of the document
14 and the different document.

15 5. The method of claim 2 or 3 further comprising
1 enabling generation of the document and the different
2 document using the elements and bindings.

3 6. The method of claim 1 or 3 further comprising
1 enabling storage of the content elements and the layout
2 elements.

3 7. The method of claim 1 or 3 in which at least some
4 of the layout elements and at least some of the content
5 elements are identified by uniquely named binding sites.

6 8. The method of claim 1 or 3 in which the content
7 elements are stored in a portfolio and the layout elements
8 are stored in a separate portfolio.

9 9. The method of claim 1 or 3 in which some of the
10 bindings are layout-centric and some of the bindings are
11 content-centric.

12 10. The method of claim 2 or 3 in which the bindings
13 for the two documents are the same and at least one of the
14 content elements and layout elements associated with the
15 binding sites is different for the document and the different
16 document.

17 11. The method of claim 2 or 3 in which the bindings
18 for the two documents are different and at least some of the
19 content elements and the layout elements are the same for the
20 document and the different document.

21 12. A machine-based method comprising

1 using an application program to create content elements
2 for use in documents,
3 storing the content elements in a format native to the
4 application program,
5 forming a content portfolio, based on the stored
6 content elements, by
7 storing unique binding site names associated with
8 respective content elements, and
9 storing information with each of the content
10 elements that aids a formatter in generating documents
11 based on the content elements and on layout elements
12 stored in a layout portfolio.
13 13. The method of claim 12 in which the information
14 that aids the formatter comprises attributes associated with
15 the content elements.
16 14. The method of claim 12 further comprising storing
17 a binding specification which refers to the content elements.
18 15. The method of claim 12 in which the forming of the
19 content portfolio also comprises storing implementation
20 specific properties.
21 16. The method of claim 12 in which the forming of the
22 content portfolio also comprises storing portfolio-specific
23 attributes.
24 17. The method of claim 12 in which the forming of the
25 content portfolio also comprises storing a list of binding
26 sites of elements belonging to the content portfolio.
27 18. The method of claim 12 in which the forming of the
28 content portfolio also comprises storing a list of groups of
29 content elements belonging to the content portfolio.
30 19. A medium storing a machine-readable program that

1 enables storage of bindings that describe a document by
2 associating content elements with layout elements, the layout
3 elements defining layout features or placement information to
4 be applied to the associated content elements in the
5 document, the bindings being stored separately from both the
6 content and layout elements.

7 20. A medium storing a machine-readable program that

1 enables storage of bindings that describe a document by
2 associating content elements with layout elements, the layout
3 elements defining layout features or placement information to
4 be applied to the associated content elements in the
5 document, and

6 enables storage of bindings that describe another,
7 different document by associating at least one of the content
8 elements with at least one of the layout elements, the at
9 least one layout element defining layout features or
10 placement information to be applied to the corresponding at
11 least one content elements in the different document.

12 21. A medium storing a content portfolio capable of
13 configuring a machine to enable generation of documents based
14 on a content portfolio, a layout portfolio, and a binding
15 specification, the content portfolio including content
16 elements, names of unique binding sites associated with the
17 content elements, and information configured to aid a
18 formatter in generating the documents based on the content
19 portfolio, the layout portfolio, and the binding
20 specification.

21 22. The medium of claim 21 in which the information
22 that aids the formatter comprises attributes associated with
23 the content elements.

24 23. The medium of claim 21 in which the information
25 that aids the formatter comprises implementation specific
26 properties.

27 24. The medium of claim 21 in which the information
28 that aids the formatter comprises portfolio-specific
29 attributes.

30 25. The medium of claim 21 in which the information
31 that aids the formatter comprises a list of binding sites of
32 elements belonging to the content portfolio.

33 26. The medium of claim 21 in which the information
34 that aids the formatter comprises a list of groups of content
35 elements belonging to the content portfolio.

36 27. A machine-based method comprising
1 using an application program to create layout elements
2 for use in documents,

3 storing the layout elements in a format native to the
4 application program,

5 forming a layout portfolio, based on the stored layout
6 elements, by storing unique binding site names associated
7 with respective layout elements, and

8 storing information with each of the layout elements
9 that aids a formatter in generating documents based on the
10 layout elements and on content elements stored in a content
11 portfolio.

12 28. The method of claim 27 in which the information
13 that aids the formatter comprises attributes associated with
14 the layout elements.

15 29. The method of claim 27 further comprising storing
16 binding specifications that refer to the layout elements.

17 30. The method of claim 27 in which the forming of the
18 layout portfolio also comprises storing implementation
19 specific properties.

20 31. The method of claim 27 in which the forming of the
21 layout portfolio also comprises storing portfolio-specific
22 attributes.

23 32. The method of claim 27 in which the forming of the
24 layout portfolio also comprises storing a list of binding
25 sites of elements belonging to the layout portfolio.

26 33. The method of claim 27 in which the forming of the
27 layout portfolio also comprises storing a list of groups of
28 layout elements belonging to the layout portfolio.

29 34. A medium storing a layout portfolio capable of
30 configuring a machine to enable generation of documents based
31 on the layout portfolio, a content portfolio, and a binding
32 specification, the layout portfolio including layout
33 elements, names of unique binding sites associated with the
34 layout elements, and information configured to aid a
35 formatter in generating the documents based on the layout
36 portfolio, the content portfolio, and the binding
37 specification.

38 35. The medium of claim 34 in which the information
39 that aids the formatter comprises attributes associated with
40 the layout elements.

41 36. The medium of claim 34 in which the information
42 that aids the formatter comprises implementation specific
43 properties.

44 37. The medium of claim 34 in which the information
45 that aids the formatter comprises portfolio-specific
46 attributes.

47 38. The medium of claim 34 in which the information
48 that aids the formatter comprises a list of binding sites of
49 elements belonging to the layout portfolio.

50 39. The medium of claim 34 in which the information
51 that aids the formatter comprises a list of groups of layout
52 elements belonging to the layout portfolio.

53 40. A machine-based method comprising creating a
54 binding specification for use in formatting documents based
55 on the binding specification, content elements referenced by
56 the binding specification, and layout elements referenced by
57 the binding specification, and storing in the binding
58 specification global bindings and direct bindings that aid
59 the formatter in formatting documents.

60 41. The method of claim 40 in which the global
61 bindings include a list of element bindings that define a
62 default binding for elements of a specified type.

63 42. The method of claim 41 in which the global
64 bindings include a list of model bindings that define a
65 default model for a specified binding site.

66 43. The method of claim 40 in which the binding
67 specification contains composition sequences that aid the
68 formatter in formatting documents, the composition sequences
69 defining the order in which formatting is to proceed using
70 bindings between content elements and layout elements, each
71 of the composition sequences including composition blocks
72 containing ordered lists of direct bindings.

73 44. The method of claim 43 in which each of the direct
74 bindings comprises a placement binding or a style binding.

75 45. A medium storing a binding specification capable
76 of configuring a machine to enable generation of documents
77 based on the binding specification, a layout portfolio, and a
78 content portfolio, the binding specification including global
79 bindings and direct bindings that aid the formatter in
80 formatting documents.

81 46. The medium of claim 45 in which the global
82 bindings include a list of element bindings that define a
83 default binding for elements of a specified type.

84 47. The medium of claim 45 in which the global
85 bindings include a list of model bindings that define a
86 default model for a specified binding site.

87 48. The medium of claim 45 in which the binding
88 specification contains composition sequences that aid the
89 formatter in formatting documents, the composition sequences
90 defining the order in which formatting is to proceed using
91 bindings between content elements and layout elements, each
92 of the composition sequences including composition blocks
93 containing ordered lists of direct bindings.

94 49. The medium of claim 45 in which each of the direct
95 bindings comprises a placement binding or a style binding.

96 50. A method of formatting a document based on
97 bindings, content elements, and layout elements, the bindings
98 defining relationships between the content elements and the
99 layout elements, the method comprising processing bindings
100 that comprise placement bindings before processing bindings
101 that comprise style bindings.

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102 51. A machine-based method of formatting a document
103 using stored content elements and stored layout elements, the
104 stored content elements including content aspects and layout
105 aspects, the method comprising determining whether the layout
106 should be dominated by the layout components or the layout
107 aspects of the content components.

108 52. The method of claim 51 in which the content
109 elements include layout aspects and the bindings contain
110 information sufficient to mediate a conflict between a layout
111 aspect of a content element and a layout element with which
112 the content element is associated.

113 53. A medium storing a machine-readable program that
1 enables an application program to create layout
2 elements for use in documents,
3 stores the layout elements in a format native to the
4 application program,
5 forms a layout portfolio, based on the stored layout
6 elements, by storing unique binding site names associated
7 with respective layout elements, and
8 stores information with each of the layout elements
9 that aids a formatter in generating documents based on the
10 layout elements and on content elements stored in a content
11 portfolio.

12 54. A medium storing a machine-readable program that

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